RESEARCH AND DEVELOPMENT, NEUCHATEL - QUARTERLY REPORT

DIVISION : PROCESS DEVELOPMENT

SUBJECT TITLE : MINIPRIMARY

PERIOD COVERED : JULY - SEPTEMBER 1988

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KEYWORDS : miniprimary, equipment, millet, heinen

EQUIPMENT (Project MILLET)

OBJECTIVES

The aim of this project is to increase the capacity of the Miniprimary and improve flexibility as well as the quality of the cut filler while maintaining the desired subjective characteristics.

STATUS

As mentioned in the last Quarterly Report (1), the new equipment was installed from May 24 to June 3, 1988. One of the advantages this equipment offers is the possibility of on-line reordering of Burley, which has two positive aspects :

- time saving (1 hour)
- less degradation on Burley strips and consequently on the final cut filler.

Four laydowns were conducted in the Miniprimary :

- 100% Burley part of the MLK, batch No. 1428 (Burley treatment with reordering on a separate cycle: control)

- 100% Burley part of the MLK, batch No. 1429 (Burley treatment with on-line reordering)

- MLK batch No. 1432 (Burley treatment with reordering on a separate cycle: control)

- MLK batch No. 1433 (Burley treatment with on-line reordering)

Samples of strips and cut filler were taken from both batches 1428 and 1429 in order to be sieved on the Cardwell strip shaker and on the PM cut rag shaker respectively. The results are reported in Appendix 1.

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Appendix 2 shows the quality parameter data of the two MLK batches 1432 and 1433 as well as some relevant parameters of the MLK cigarettes produced from these batches. Prototype 003p was produced with FTR MLK cut filler (control cigarette).

COMMENTS

Appendix 1

- The SSI of the Burley after top flavor application has improved from 66.3% to 75.7% with on-line reordering. When compared with the TPO results of the FTR Burley, the SSI of Miniprimary Burley exit top flavor application is similar to that of FTR at the exit of the Burley top cylinder.

- The on-line reordering also has a positive impact on the cut Burley tobacco, as a larger strip size leads to a larger cut filler size.

Appendix 2

- The results show that the improvement of the Burley strip size also influence positively the cut filler size of the finished Miniprimary MLK cut filler. The SSI of the cut filler before and after maker has improved by one point.

- The cigarette results do not show relevant trends except for the firmness, which is close for the two Miniprimary cigarettes but 0.2 mm better than that produced with FTR MLK cut filler.

TASTE EVALUATION

On August 24, 1988, the three prototypes were evaluated by Panel A in Lausanne (2). The panelists found that both Miniprimary cigarettes, trial as well as control, gave good Marlboro characteristics.

Compared to the reference produced with FTR cut filler, trial 001p was fully in line with standard quality and thus acceptable.

PLANS

As the prototype was accepted, the on-line reordering of Burley was implemented in the Miniprimary.

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OPERATIONS

The following batches were processed through the Miniprimary during the reporting period (64 working days) :

	64 working days (July-Sept. 1988)
For Product Development :	31
For Process Development :	4
For Quality Assurance :	8
For Research :	27
	70

The number of batches including Burley treatment increased to 58.6% during this quarter from 42.3% during the first 6 months of 1988.

REFERENCES

(1) Borgognon-D., Quarterly Report, April-June 1988, p. 44

(2) De Borst-E., Taste Evaluation, August 24, 1988

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APPENDIX 1

Burley cased tobacco (Burley part of the MLK)

Miniprimary Batch No.		1428 (MP control)		1429 (MP trial)		TPO Results (FTR)	
Strip Size		(1)	(2)	(1)	(2)	(1)	(2)
After Burley Top							
OV	%	14.9	1.0	18.7	2.4	20.0	1.8
1/1 inch	%	18.7	5.5	33.3	3.4	39.5	
1/2 inch	%	40.5	0.9	40.8	1.9	21.3	
1/4 inch	%	30.4	3.9	21.9	1.4	29.8	
1/8 inch	%	8.1	1.7	3.4	0.3	7.6	
Pan	%	2.3	0.5	0.6	0.1	1.8	
SSI	%	66.3	3.6	75.7	1.4	72.2	
Sieve OV	%	14.8	0.5	17.5	0.8	19.0	
Cut Filler Size							
OV	%	12.4	0.3	14.4	0.8		
6 mesh	%	17.6	1.6	32.2	4.0		
12 mesh	%	35.8	0.3	33.3	1.2		
20 mesh	%	40.2	1.8	30.2	2.8		
35 mesh	%	6.0	0.4	3.9	0.3		
Pan	%	0.4	0.1	0.4	0.1		
SSI	%	66.0	0.9	73.3	1.8		
Sieve OV	%	12.9	0.1	12.7	0.0		
CV as is	ml/g	5.0	0.1	5.3	0.1		
CV OV	%	12.9	0.1	13.1	0.1		
CCV	ml/g	5.2	0.1	5.5	0.1		

(1) mean value, (2) std deviation

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APPENDIX 2

Miniprimary Batch No.		1432 (MP control)		1433 (MP trial)		FTR Control	
Cigarette prototype		002p		001p		003p	
Cut Filler Size		(1)	(2)	(1)	(2)	(1)	(2)
Before maker :							
OV	%	13.5	0.3	13.5	0.3		
6 mesh	%	23.3	5.0	24.9	4.2		
12 mesh	%	32.8	1.3	32.5	1.1		
20 mesh	%	37.1	3.2	36.9	2.5		
35 mesh	%	6.3	0.8	5.2	0.7		
Pan	%	0.5	0.1	0.5	0.1		
SSI	%	68.0	2.4	69.0	2.0		
Sieve OV	%	13.0	0.2	13.2	0.1		
CV as is	ml/g	5.6	0.1	5.4	0.1		
CV OV	%	13.1	0.2	13.4	0.2		
CCV	ml/g	5.8	0.1	5.8	0.1		
After maker :							
6 mesh	%	6.8	0.7	7.7	0.4	2.5	0.4
12 mesh	%	33.4	1.0	35.3	0.3	25.8	2.1
20 mesh	%	50.0	1.1	48.8	0.5	55.4	0.5
35 mesh	%	9.3	0.4	7.7	0.4	14.2	1.4
Pan	%	0.5	0.1	0.5	0.1	2.1	0.5
SSI	%	59.2	0.7	60.5	0.4	53.1	1.3
Sieve OV	%	13.1	0.1	13.1	0.1	12.8	0.1
CV as is	ml/g	5.2	0.0	5.1	0.0	4.8	0.0
CV OV	%	13.1	0.1	13.3	0.0	12.9	0.0
CCV	ml/g	5.4	0.1	5.4	0.0	4.9	0.0
Cigarette							
Total weight	mg/cig	977		986		982	
Tob. weight at 12.5% OV	mg/cig	764		764		762	
Corr. firmness at 12.5% OV	mm	2.97		2.94		3.17	
Cigarette RTD	mm H_2O	103		105		107	
Dilution	%	14		14		15	
Filler							
Total alkaloids	%	1.91		1.91		1.91	
Red. sugars	%	7.3		7.8		7.8	
Nitrate-nitr.	%	0.21		0.22		0.21	
Smoke							
Tar	mg/cig	16.0		15.8		15.7	
SN	mg/cig	1.12		1.10		1.11	
CO	mg/cig	15.7		16.2		16.1	
NO	mg/cig	0.22		0.23		0.23	
Puff ct	n/cig	9.0		9.0		8.9	

(1) mean value, (2) std deviation

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